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Remarks

Applicants note with appreciation the Examiner's review of the Appeal Brief and the Examiner's willingness to withdraw the finality of the previous office action.

In order to simplify the issues under consideration and to highlight certain of the claimed subject matter, claims 1, 4-5, 9-11, 13-14, and 36-42 are canceled without prejudice. Similarly, claim 28 has been amended to depend from claim 17, and thus all of the remaining claims are now dependent from claim 17 as well.

Claim 17 has been amended to incorporate the recitations of now-canceled claims 23 and 25. Thus, claim 17 now additionally recites the factors that the sample is dried at a temperature that is sufficient to melt at least a portion of the fat and oil in the sample, and that the pulse NMR is carried out with the sample at substantially the same temperature as during the drying step.

In the Official Action, claim 17 as previously pending was rejected on a combination of the Thompson reference, when combined with either the Collins '132 patent or the Bostian reference. The Examiner also objected to claim 17 based on the expression of, "pulse radio frequencies from the NMR analyzer," and this phrase has been corrected in the manner suggested by the Examiner to include the words, "irradiation at."

Because claim 17 now incorporates the recitations of previous claims 23 and 25, Applicants submit that claim 17 is properly analyzed in light of the rejection previously brought to bear against claim 23; i.e., the combination of Thompson with Collins or Bostian (Paragraph 11 of the Official Action).

Thompson discloses a method of determining the oil content in oil-containing sand. The method dries a homogenized sample using a microwave technique—indeed, using an instrument from the assignee of the claimed invention (Thompson at page 137, "Equipment"). The dried sample is then cooled to room temperature (page 137, Procedure step 8) after which the cooled sample is subjected to NMR analysis. Thompson neither

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discloses nor suggests the analysis of food products, nor any products that contain both fats and oils.

Collins '132 discloses an earlier method of fat content determination that uses microwaves to dry the material and then follows with a more traditional solvent-extraction technique to calculate the amount of fat present in the original sample (e.g., Figure 1, or Column 4, lines 44-56).

The Bostian reference is a collaborative study of the Collins method (e.g., footnote 2 on page 876; "Reagents and Apparatus" paragraph (a)) as carried out on 28 meat samples. In each case, the fat determination was conducted by extraction using methylene chloride (CH_2Cl_2).

Thompson cannot be applied against claim 17 as now pending (and thus was not properly applied against previously pending claim 23) because Thompson specifically teaches that the samples that are dried in the microwave instrument are cooled in a desiccator before being subjected to NMR analysis. This is consistent with Thompson's field of use (analysis of oil sand samples and extraction of petrochemicals from oil sand). Thompson deals with homogeneous mixtures of oil and sand (page 136, "Experimental") in which the oil molecules are expected to be in the liquid state and thus do not need to be melted to be analyzed via NMR.

In contrast to Thompson, the claimed invention is particularly useful for food products, which can contain fats alone, oils alone, or both fats and oils. In this aspect, the Thompson reference is arguably nonanalogous to the food products industry. Applicants believe that claim 17 can be distinguished without appeal to the doctrine of nonanalogous art, but Applicants specifically reserve the right to raise this issue should further discussion become necessary.

Because the claimed method is intended to be particularly useful in the analysis of food products, claim 17 recites that the drying step is carried out at a temperature sufficient to melt fats and, as now amended, to recite that the NMR is carried out at such fat-melting

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temperatures (expressed as the same temperature as the drying step) so that all of the fat and oil products in the food sample can be properly analyzed by NMR. As stated in the specification, e.g., Paragraph 0010 of US 2002/0119575 and as recognized in the art, in many cases the proton NMR of solid materials cannot be measured in the same manner as the proton NMR of liquid materials.

Accordingly, because Thompson does not deal in fats, but rather only in oils (the well-understood distinction being set forth in Applicants' specification; e.g., Paragraph 0003 of US 2002/0119575), Thompson fails to recognize the need or advantage of carrying out the NMR analysis at an elevated temperature at which fats will remain melted and can be properly analyzed. Indeed, the definition of fat is a material that, in addition to its chemical composition, tends to be a solid at room temperature while an oil is defined as being liquid at room temperature. Thus, by cooling the samples to room temperature Thompson teaches away from the claimed invention and fails to recognize the problem being addressed by the claimed invention.

Collins '132 is merely parallel to Thompson in its recognition that microwaves can be used for the drying step. Collins shares the same weakness as Thompson, however, in failing to suggest the use of any method other than extraction for fat or oil content.

As noted above, the Bostian reference is a collaborative study using the Collins method. Thus, as confirmed by the Examiner's use of Collins '432 or Bostian in the § 103 combination, the information provided by either adds nothing to that provided by the other.

Therefore, neither Collins nor Bostian offer any solution to the weaknesses of Thompson with respect to the recitations of claim 17. Collins simply represents an example of the prior art; i.e., the use of solvent-extraction techniques to measure fat or oil content from previously-dried samples.

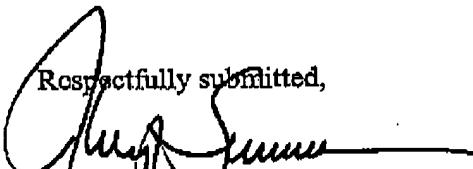
All of the remaining claims now depend in some fashion from claim 17. Accordingly, given that claim 17 as now amended addresses the Examiner's objections and

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defines over the applied combinations, Applicants submit that the remainder of the claims are likewise allowable.

Respectfully submitted,

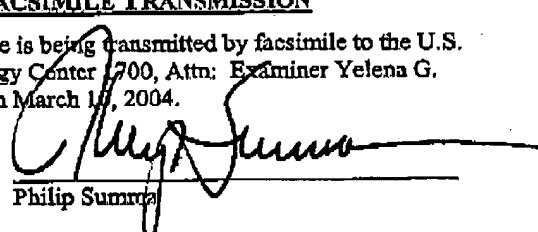

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I hereby certify that this correspondence is being transmitted by facsimile to the U.S. Patent and Trademark Office, c/o Technology Center 2200, Attn: Examiner Yelena G. Gakh, at facsimile number 703-872-9306 on March 10, 2004.


Philip Summa